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The attached document is an analysis performed by the Energy Information Administration (EIA) that compared the energy and economic impacts of two potential CAFE light truck standard scenarios to the Annual Energy Outlook 2003 Reference Case. This analysis was referred to in NHTSA's Notice of Proposed Rulemaking for MY 2005-2007 light truck CAFE standards (67 FR 77015, December 16, 2002).

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Summary of Light Truck CAFE provisions

This analysis provides a comparison of the energy, and economic impacts of two proposed CAFE standards to the AEO2003 Reference Case. The two CAFE cases include:

- 1) Light truck¹ (8,500 pounds or less gross vehicle weight) CAFE standards increase by 0.5 miles per gallon (mpg) beginning in 2005 and ending in 2007 at which point it remains constant. This increases the current standard of 20.7 mpg to 22.2 mpg.
- 2) Light truck CAFE standards increase by 0.5 mpg beginning in 2005 and ending in 2010 at which point it remains constant. This increases the current standard to 23.7 mpg.

The CAFE standard and projections of light truck CAFE, vehicle curb weight, fuel savings, and impacts on gross domestic product (GDP) and jobs are provided in Table 1. The following is a summary of the findings of this analysis:

- For the 2007 CAFE standard of 22.2, it is estimated that the standard will be met in all years except 2007. In 2007, light truck fuel economy is projected to be 0.2 mpg lower than the standard. This is due to primarily to increased vehicle weight resulting from increased safety requirements.² Light truck weight is reduced compared to the Reference case, but continues to increase relative to current values. In 2010, light vehicle annual fuel use is reduced 0.22 million barrels per day (2.1 percent) and 0.36 million barrels per day (2.9 percent) in 2020 compared to the AEO2003 Reference Case. Cumulative light vehicle fuel savings from 2005 through 2020 total 4.0 million barrels per day.
- For the 2010 CAFE standard of 23.7, it is estimated that the standard will not be met in year 2007 and years 2010 through 2015. Between years 2010 and 2015, light truck fuel economy is projected to be 0.2 mpg to 0.1 mpg lower than the standard. Light truck weight is reduced compared to the Reference case, but continues to increase relative to current values. In 2010, light vehicle annual fuel use is reduced 0.25 million barrels per day (2.4 percent) and 0.51 million barrels per day (4.2 percent) in 2020 compared to the AEO2003 Reference Case. Cumulative light vehicle fuel savings from 2005 through 2020 total 5.2 million barrels per day.

¹ Light trucks include vehicles defined as pickup trucks, vans or minivans, and sport utility vehicles (SUVs).

² NHTSA is revising Federal Motor Vehicle Safety Standard (FMVSS) 214 so that increased safety is provided to occupants in a side impact collision. These standards will be designed to reduced injury to the head, rib cage, spinal cord, and pelvic regions by improving occupant protection and limiting impact penetration. Although these standards have not been finalized, NEMS assumes they will be phased in through 2005 and 2007.

Macroeconomic Impacts

Tables 1 and 2 summarize the relatively small macroeconomic impacts of the CAFE cases. There are three major effects that influence the economy at the aggregate level. First, with stricter CAFE standards there is an increase in the average price of light duty trucks, which has an adverse effect on the family budget. Second, with greater fuel efficiency and a decline in aggregate expenditures, there is a reduction in energy use in the economy due to a decline in oil demand. Third, as a result of a decrease in energy demand, energy prices decline relative to the baseline case.

- For both standards, the incremental cost of light duty trucks rise steadily through 2010 and then decline through 2020. For the 2007 CAFÉ standard, the cost for light trucks rises by \$275 dollars (expressed in 2001 dollars) in 2010, then declines to \$134 in 2020. In contrast, the 2010 CAFÉ standard the incremental cost reaches \$397 in 2010 and falls to \$197 in 2020. For both CAFE cases, technology is forced into the market earlier than projected in the Reference Case. As a result, incremental vehicle prices estimated for the CAFE cases fall as the level of technology adoption in the Reference case approaches those achieved in the CAFE cases.
- From a macroeconomic perspective, declining real consumption and investment expenditures dominate the early part of the forecast period through 2010 and introduce cyclical behavior in the economy, resulting in small output and employment losses. Real GDP is forecast to be 0.10 percent lower in 2010 in the 2007 CAFÉ standard and the 2010 CAFÉ standard is 0.13 percent lower. Non-agricultural employment declines by 105 thousand in 2010 for the first case and 134 thousand jobs for the second case.
- As the economy moves further out in the forecast period, the impacts on the economy are moderated as the incremental cost of light trucks in both cases begins to decline and fuel expenditures decline. By 2015, the economy is back to baseline values for both cases. The adjustment of the economy continues beyond 2015 as output and employment continue to rebound from the lost output and employment in the first decade after imposition of the CAFÉ standards. By 2020 the level of GDP and employment is actually above their baseline values as the economy moves toward its natural long-run growth path.
- Viewed over the entire forecast period, the sum of the discounted changes (billions of dollars discounted at 7 percent) in real GDP totals a loss of \$31 billion and for the 2007 CAFÉ standard and a loss of \$44 billion for the 2010 CAFÉ standard.

Table 1. Summary of Key Results From Light Truck CAFE Cases

	2001	2005	2007	2010	2015	2020
AEO2003 Reference Case						
Fuel Economy (mpg)	20.7	20.9	20.8	21.0	21.8	22.5
Average Vehicle Weight (pounds)	4258	4289	4456	4529	4558	4593
2007 CAFE Case						
CAFE Standard	20.7	21.2	22.2	22.2	22.2	22.2
Fuel Economy (mpg)	20.7	21.7	22.0	22.7	23.0	23.4
Average Vehicle Weight (pounds)	4258	4248	4360	4411	4451	4487
Fuel Savings (million barrels per day)	0.000	0.015	0.083	0.217	0.338	0.358
Carbon Equivalent Emissions Reductions (million metric tons)	0.0	0.5	3.1	8.0	12.2	12.9
Incremental Cost of Trucks, 2001 Dollars	0	141	219	275	180	134
Change in Non-agricultural Employment (thousands)	0	-1	-61	-105	+70	+90
Change in Real GDP from Baseline (Billion 1996\$)	0	0	-7	-12	3	6
Percent Change in Real GDP from Baseline	0	0	-0.06%	-0.10%	+0.02%	+0.04%
2010 CAFE Case						
CAFE Standard	20.7	21.2	22.2	23.7	23.7	23.7
Fuel Economy Achieved	20.7	21.7	22.0	23.5	23.6	23.9
Average Vehicle Weight (pounds)	4258	4248	4360	4394	4433	4468
Fuel Savings (million barrels per day)	0.000	0.015	0.082	0.254	0.455	0.514
Carbon Equivalent Emissions Reductions (million metric tons)	0.0	0.5	3.1	9.4	16.4	18.5
Incremental Cost of Trucks, 2001 Dollars	0	141	218	397	265	197
Change in Non-agricultural Employment (thousands)	0	-2	-60	-134	+55	+124
Change in Real GDP from Baseline (Billion 1996\$)	0	0	-7	-16	-0	8
Percent Change in Real GDP from Baseline	0	0	-0.06%	-0.13%	0.00%	0.05%

Source: National Energy Modeling System runs: aeo2003.d110502c, ltcafe2007.d112002a, and ltcafe2010.d112002a.